D1 COIN
WHITEPAPER

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CONTENT

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INTRODUCTION

A QUESTION TO DIGITAL INNOVATORS

Diamonds have been revered for millennia. As early as the 4th Century BC billion-year old gems were transported along the ancient Silk Road from India to China. Romans used diamond "truth" rings as a sign of affection, they believed that a vein in the third finger (vena amorous) ran directly to the heart.

Today 78% of engagement rings contain diamonds. A diamond is one of the most potent, ancient and universally accepted tokens of value that humanity universally recognises.

Diamonds are expensive. Most people buy a real diamond only once in a lifetime in an engagement ring.

Diamonds are rare. A diamond takes over a billion years to form, and new deposits are devilishly hard to find, a new one is discovered somewhere in the world about once every generation. 80% of diamonds are destined to industrial use, and less than 2% are considered "investment diamonds:" pure, high quality stones.

Diamonds are solid in every sense. Few people realize how well diamonds have been at preserving wealth throughout history. Since 1960, the purchasing power of USD 100 bill has declined to USD 12 today, while the purchasing power of USD 100 in diamonds had increased to USD 1,144[1] today. This diamonds have outperformed US Dollars by a factor of 100 times.

Diamonds also share an important characteristic with Bitcoin: Limited supply. In fact mining diamonds is considerably more difficult and expensive than mining a protocol-based crypto currency.

[1.] Antwerp World Diamond Centre, International Monetary Fund

INTRODUCTION

WHAT IS D1?

D1 is named after M1, a term from economics, which refers to the base monetary supply, i.e. all the cash and equivalent circulating in the economy. D1 represents the diamonds circulating in the economy, which have an estimated market value of USD 1 trillion. In one US Dollar you own a small fraction of the total M1 of USD 3.6[2] trillion; in the D1 Coin you own a fraction of institutionally-certified, securely vaulted stock of high-grade diamonds. The D1 Coin is a diamond-backed token, with each D1 Coin pegged to the value of a fraction of an authentic, natural diamond, a proxy for ownership of a share of the world's diamond reserve that has proven to be 100x more resilient to devaluation than US Dollar.

The Fundamentals of the diamond market are impressive: according to Bain & Co, within the next decade a supply gap will emerge that is larger than today's total global production of diamonds.

Diamonds will become more sophisticated too. A diamond will carry a lot of precious information about its provenance on the blockchain. Imagine you are a loving father and you'd like to offer your daughter a diamond. What would you say if that were not just any diamond, but a gem that after billions of years underground saw the light of the day exactly on her birthday? This additional information will differentiate individual stones one from another, make possible collections, auctions, emphasise rarity, enrich numerology and astrology, and open up whole new aspects of diamonds resulting in growing demand for natural diamonds.

Last but not the least, demand is set to explode. In the 60-ies Japanese were buying any diamonds; in the 70-ies it acquired the Western habit of engagement rings with diamonds and within a decade Japan became the second biggest diamond market in the world after the US. What is happening in China and India now is history repeating itself, but on a scale that is 10 times larger.

D1 is using modern technology to make ownership of diamonds easier, faster, and a lot more fun. And it opens the world of diamonds not only to those with USD 10,000 or more to spare, but even to those with $10. An important difference between dollars and diamonds is that Governments can't print diamonds when they need to.

D1 Coin is a digital reflection of a brilliant, valuable and treasured natural wonder – the polished diamond.

[2.] Bloomberg

1.
EXECUTIVE SUMMARY

Cryptocurrencies and the underlying blockchain technology are increasingly popular amongst individuals, financial institutions and governments, but many still think of cryptocurrencies as objects of speculation. Being subject to potentially huge price corrections, most cryptocurrencies are a poor store of value and a poor means of exchange, giving rise to a need for a more secure alternative. D1 Coin is designed to address this need, combining the convenience of digital currencies with stability of traditional assets. D1 Coin is a diamond-backed cryptocurrency, with each D1 Coin pegged to the value of a fraction of an authentic, natural diamond, as determined by the proprietary pricing algorithm, the D1 Matrix (see appendix 1). Diamonds are an ideal asset backing for a token since they are rare, taking over a billion years to develop, have several millennia of history as a recognized store of value, and are small and therefore easily stored and transported.

D1 Diamonds will be sourced an authorized supplier (a "Diamond Supplier"). Each diamond must have an accompanying Gemological Institute of America (GIA) certification. The initial supply will be procured by Diamundi Pte Ltd, Singapore. This supply is obtained from world leading diamond miners, such as Alrosa, and top diamond polishers, such as KGK Group and Kristall Smolensk. D1 Diamonds will be stored in secured and insured vaults in Singapore, Switzerland, and select global locations with established logistics and storage specialists such as Malca-Amit and Brink's, and will be overseen by the D1 Mint. Users may at any point in time convert their D1 Coins into diamonds at a pre-determined ratio determined by D1 Matrix, by selecting specific diamonds on the D1 website and arranging for delivery or collection.

Users who own D1 Coins may use them for a variety of purposes: payments, investing and trading. By being pegged to a fixed amount of investment-grade diamonds, D1 Coin aims to function as a convenient digital token with limited amounts of speculative trading by having an intrinsic value derived from its asset base.

The underlying blockchain technology for D1 Coin is built on the Ethereum blockchain. Transactions made using D1 Coins will be validated using the Proof of Work algorithm, in which miners are rewarded with coins and/or transaction fees. Understanding the security risks of blockchain technology, the D1 Mint complements the in-house team of software engineers with multiple third-party cybersecurity firms to maintain a spotless track record on security.

To realize its vision of making D1 Coin the globally-trusted, principal diamond-backed token, the core management team at D1 Mint is comprised of professionals with extensive experience in software engineering and asset management.

A GROWING TREND IN CRYPTO UNIVERSE

2. ASSET-BACKED TOKENS:
A GROWING TRAND IN CRYPTO UNIVERSE

Asset-backed tokens are beginning to emerge in cryptomarkets and have the potential to eventually overshadow first generation cryptocurrencies like Bitcoin and Etherium. This new class of token is markedly different from its predecessors, as it is characterised by its security, stability and liquidity. Asset-backed tokens mark a natural evolution of the blockchain, as it evolves from its roots with Bitcoin to find broader market applications. The weaknesses of Bitcoin and other cryptocurrencies have become apparent: the lack of intrinsic value gives rise to vastly differing perceptions of its value, with naysayers saying its worth zero and supporters arguing for a million-dollar price tag, resulting in huge price swings. This stomach-churning volatility makes most cryptocurrencies highly unpredictable, and thus poor stores of wealth for investors, and risky media of exchange for merchants.

The main benefits of asset-backed tokens are the following:

LIQUIDITY

Liquidity in the simplest terms is how quickly and easily something can be bought or sold based on the volume of trading activity in a market. Stocks and bonds can be sold almost immediately at a market price, while other assets like diamonds, real estate, or collectibles require much more time due to the lower volume of secondary market trading activity. The primary reason that real world assets would want to be on the blockchain is to increase their liquidity. Traditional markets only trade Monday through Friday, while cryptoassets trade twenty-four hours a day, seven days a week, 52 weeks a year. The ability to access markets regardless of geographical location or arbitrary time differences will provide more trading opportunities.

SECURITIZATION OF ASSETS

Some assets require a primary owner of the underlying asset, for example, each individual diamond does not allow joint ownership. Tokens increase the potential for fractional and shared ownership because tokens are divisible. A tokenized diamond could be easily divided among the several owners.

OWNERSHIP RIGHTS

With digital asset ownership there is an undeniable proof of ownership, which can't be easily destroyed like a piece of paper. Ownership records cannot be altered by centralized authorities and a bank or government would not have the ability to seize digital ownership of an asset.

DECREASED VOLATILITY OF CRYPTOASSETS

Decreased volatility of cryptoassets. One of the main challenges for cryptocurrencies becoming mainstream is price volatility. Cryptoassets are incredibly volatile and are likely to remain volatile until a rational and more liquid market develops. Asset backed tokens have the ability to take traditional assets, such as real estate, precious metals, and intellectual property, and combine them with decentralized blockchain asset properties (efficient securitization, trustless transactions, etc). These new hybrid traditional-crypto assets will naturally be less volatile than current cryptoassets, helping the market stabilize.

### ANOTHER IMPORTANT NOTE IS THAT ASSETS CONNECTED

The cryptomarkets are evolving away from early adopters who have low historical entry prices and, as a result, high risk tolerance: if you bought Bitcoin at $500, you may not mind the price falling from $19,000 to $7,000; you're still sitting on a massive gain. But the cryptomarkets are attracting increasing numbers of new players who are more traditional investors and market participants. They are buying in at current prices, and would not welcome a 50% fall in value. This New Money will look more deeply into the investment merits of individual tokens, and thus have a greater appreciation for more traditional norms of value that asset-backed tokens can provide.

The blockchain is at its heart a secure ledger, a form of accounting and reporting that offers clear visibility of historical ownership and transactions. As such, it is ideally suited for the asset management industry, which in its element consists of two ledgers: a record of investors and a record of investments. In addition, a key characteristic of the blockchain is divisibility, and this is the core concept of asset management vehicles such as funds and ETFs: an individual investor can own a small slice of a much larger portfolio that would otherwise not be obtainable. As a result, it is only natural that the blockchain should seek an application for asset management and thus asset-back tokens. The main difference is that asset-backed tokens require a real-world back-end to acquire, manage, safe-keep and divest real world assets, while cryptocurrencies that lack intrinsic value, utility tokens and security tokens do not require the same degree of accuracy, care and diligence.

To date, the big success story in asset-backed tokens is Tether, which is a token backed $1 for $1 by U.S. Dollars. From its launch in May 2015 the market cap has grown from USD 250,000 to USD 2.5 billion. More importantly, its daily trading liquidity as of 21 May is USD 2.5 billion, a whopping 100% of its market capitalization.

BITCOIN VS. TETHER CHART

TETHER CHARTS
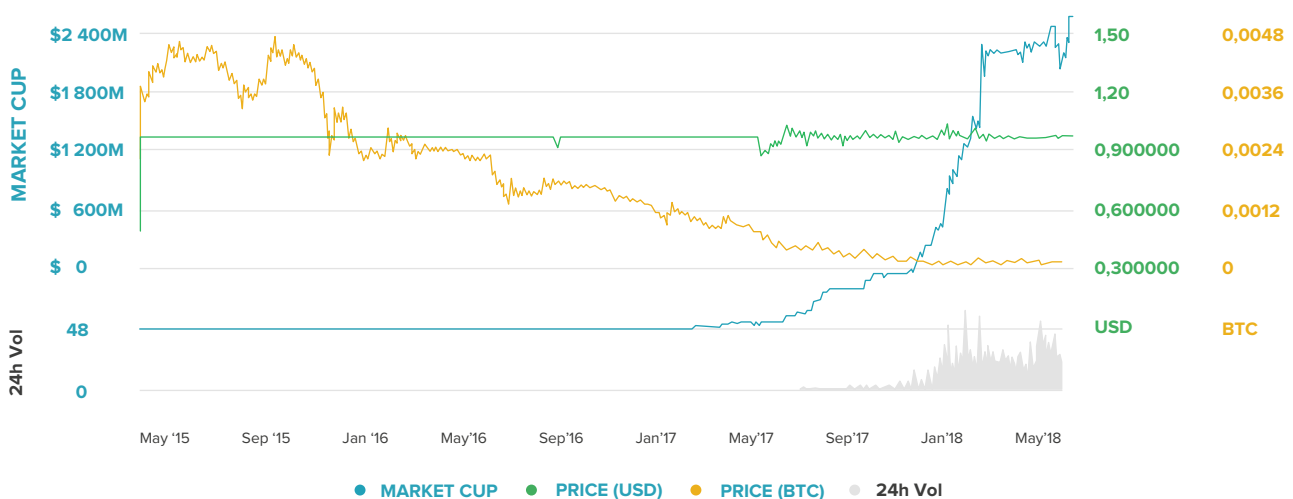
Bitcoin, in contrast, has a much larger market capitalization of USD 145 billion, but its daily trading volume is only USD 5.3 billion, 3.6% of its market capitalization. The same is true for Etherium and Ripple, which have trading volume/market capitalisation ratios of 3.1% and 1.0% respectively. And Tether remains wildly popular with investors as a stable token despite the fact that the token is surrounded in controversy, as it is supported and possibly controlled by Bitfinex, the largest Bitcoin exchange in the world by volume, and lacks transparency and audits on the amount and location of the underlying U.S. Dollars it is supposed to be holding.

In addition to the primary trading liquidity provided by asset-backed tokens like Tether, there is also a second form of liquidity that these types of tokens carry – physical liquidity derived from cashing out. Let's take the example of D1 Coin. An investor in D1 can select diamonds from

the asset pool and exchange D1 Coins for physical diamonds. While the primary purpose of D1 Coin is to offer exposure to diamonds as an asset class, the fact that token holders can exchange for physical diamonds gives the token an underlying price support: if the price of D1 falls below the value of the diamonds, token holders will take advantage of the arbitrage and exchange their tokens for diamonds.

Key success factors for asset-backed tokens will reside primarily on the back-end operations, as token holders will gravitate towards tokens with proven assets, transparent valuations, regular audits, experienced managers and reliable custodians.

We are seeing green shoots in the asset-backed token market, as players test the waters with a variety of assets, from commodities to securities, and a sprinkling of real assets like property. Expect more to come, as demand picks up from New Money entering the crypto market, and from early Bitcoin buyers who start to seek a little bit of hedging and healthy diversification.

AMOUNT RAISED VIA TOKEN SALES
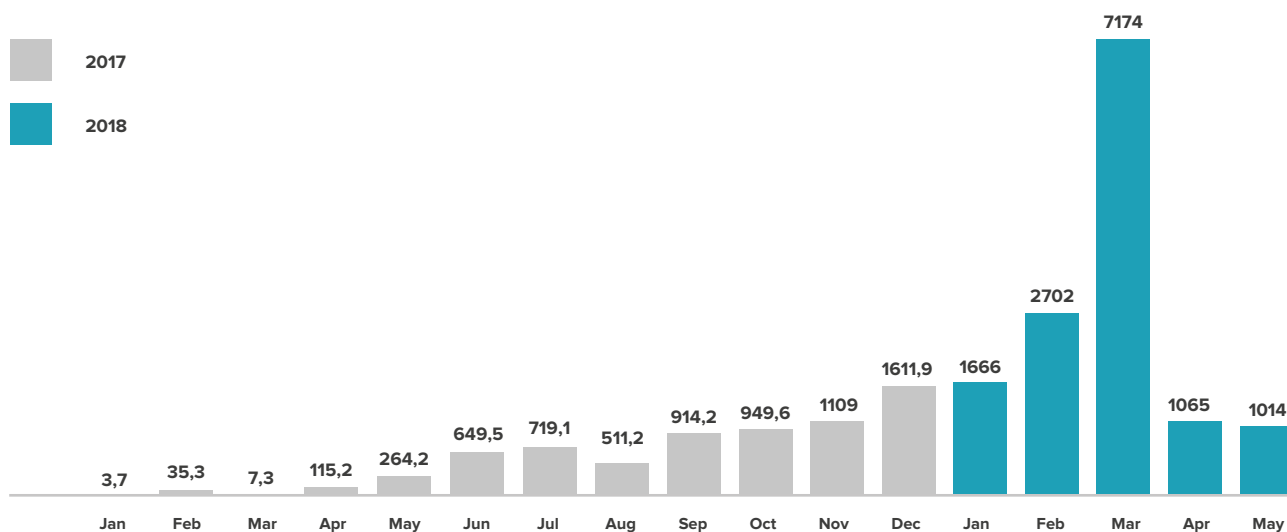
$13.6 billion was raised via token sales in Jan 2018 – 20 May 2018 vs. $6,9 billion in all of 2017. Overall token sales raised more than $21 billion to date.

But this is just the beginning: Financial assets today represent more than $250 trillion of value – and stand to be radically transformed by blockchain. The market for tokenizing real assets is expected to grow from $0.7 billion in 2016 to $2.5 billion in 2023 (CAGR of 20%) with the value of tokenized assets reaching $5 trillion in 2025 (https://blog.latoken.com/lat-platform-trading-volume-to-reach-14-trillion-by-2025-f0f1cffb8fa4)

The growing popularity of Asset-Backed Tokens is bringing a host of new issuers looking at tokenizing a wide range of assets. Asset-Backed Tokens have the advantage of combining secure and pseudonymous ownership of assets with micro-divisibility and a high degree of trading and physical liquidity.

[1.] LAT Crypto Research

We have recently witnessed efforts to tokenise both financial assets such as cash (Tether – USDT), securities (Jibrel Network Token – JNT and CryDR) and funds (Brickblock – BBK); and real assets such as diamonds (D1 Coin – D1), gold (DigixGold - DGX), property (Atlant – ATL] and art (ArtCoin – ACF). We are also seeing efforts to tokenise digital assets such as IP (MAVO – MVT) and music (Gramatik – GRMTK). While this development will offer an exciting new array of investment alternatives to crypto investors and traders, the fact remains that many of the teams developing the Asset-Backed Tokens are approaching their projects from the blockchain technology perspective, and not from the traditional asset management perspective, and thus may lack some of the basic requirements of an asset management operation.

The blockchain benefits that accrue to Asset-Backed Tokens are undoubtedly attractive for crypto investors, but what makes these tokens attractive also requires them to have a real world infrastructure to acquire, store, safe-keep, audit and redeem physical assets. The Asset-Backed Token market is in its infancy, and there has yet to be a set of standardised rules to govern the legitimacy of these tokens.

To help fill this gap, we can identify four basic requirements of asset backed tokens that can act as an effective Litmus Test to gauge their legitimacy, namely:

TRANSPARENCY, VERACITY, CUSTODY AND CONVERTIBILITY.

TRANSPARENCY

may seem like a given in a blockchain-powered market, but the level of transparency used to govern traditional tokens is insufficient in the context of Asset-Backed Tokens. The blockchain is a digital ledger that records every transaction that occurs relating to a cryptocurrency. These ledgers contain information, such as the parties involved, a timestamp and other transaction details and is available to the public, and hence transparent. But cryptocurrencies like Bitcoin only require a record of investment transactions, since there is no underlying intrinsic value to the coin to record. However, when creating Asset-Backed Tokens, a "double-ledger" system is required, one to record the token holders' transactions, the other to act as a digital ledger for the assets. This second ledger records the history of each asset purchase and sale, as well the itemisation and valuation of each asset.

VERACITY

is a close cousin of transparency, since it attests to the truth of the assets that are recorded on the blockchain asset ledger. Unlike cryptocurrencies and utility tokens, the value of Asset-Backed Tokens depends on the underlying assets. It is imperative that investors have proof that the underlying assets exist and that they are legally attributable to the token holders. Issuers therefore must maintain up-to-date and verifiable records of the assets, and these must be audited by an independent party to confirm their existence and value. For example, an issuer can issue a token backed by something as fundamental at U.S. Dollars, but if the issuer does not publish an updated account of how many U.S. Dollars are held, where they are stored or banked, and whether they are free and clear of any encumbrances, then the token holder has no way of knowing whether his tokens are really backed by assets.

CUSTODY

is another characteristic requirement of Asset-Backed Tokens that is not necessary for traditional cryptocurrencies and utility tokens. The assets underpinning Asset-Backed Tokens are real world assets and thus need to be physically or digitally safeguarded, contractually owned, and possibly insured against theft and loss. Furthermore, the assets need to be held in escrow or in trust for and on behalf of the token owners, and thus in custody. The custodian needs to be an independent party, preferably regulated, with a sound reputation and track record, and sufficiently capitalised. The custodian will work closely with the auditor to ensure that the assets are accounted for and valued correctly on a regular basis.

CONVERTIBILITY

is the final characteristic of an Asset-Backed Token, since the token holder should be able to convert the token into the asset, or have some means of "cashing out" under any circumstances and without limitations. As much as this sounds like common sense, seamless convertibility is currently in low supply in the crypto-market. Despite some Asset-Backed Tokens having very large trading liquidity on exchanges, they can have little or no real physical liquidity, mainly due to restrictive clauses pertaining to maximum daily volume or value that can be cashed out.

D1 COIN WAS DESIGNED FROM THE OUTSET TO FULLY COMPLY WITH THE STRICT REQUIREMENTS OF TRANSPARENCY, VERACITY, CUSTODY AND CONVERTIBILITY.

Asset-Backed Tokens hold great promise to attract traditional investors into the crypto-markets and to provide existing crypto-traders with a stable alternative to more volatile cryptocurrencies and utility tokens. As much as Asset-Backed Tokens sound like secure investments, however, crypto investors would be well served to apply the Litmus Test of the four "best practice" characteristics of Asset-Backed Tokens – Transparency, Veracity, Custody and Convertibility – prior to investing. Few of the existing Asset-Backed Tokens can pass these four tests, though we expect that as the crypto-market matures and more sophisticated investors start to discern between tokens with better governance, these characteristics will become standard market practice.

3.
DIAMONDS: A NEW ASSET CLASS

For millennia diamonds have represented the epitome of luxury, populating the realms of royalty and romance. Their history dates back to the first diamond mines in 4th Century BC India, which produced diamonds for Indian royalty; subsequently European royalty developed a taste for the gems, and in the 13th Century under King "Saint" Louis IX their ownership was limited to kings. With the discovery of diamond mines in South Africa in 1867 and the rise both production and the De Beers monopoly in the 20th Century, diamonds were brought to the mass market and became an essential part of every betrothal. But despite the elevated status and social ubiquity, they have so far failed to become an investable asset class.

Diamonds take literally billions of years to form naturally in the earth's mantle, where extreme heat and pressure turn carbon into gems, which are then pushed to the surface by volcanic eruptions, making these precious stones extremely rare and difficult to find and to mine. Once mined, approximately 80% of diamonds are destined to industrial use such as grinding, cutting and drilling, and the remaining gem-quality diamonds are then cut and polished, producing a fair quantity of small decorative diamonds, and a small quantity of precious diamonds. It is this last category that would qualify as investable diamonds, and can form the basis for diamonds as a future asset class.

USE OF ROUGH DIAMONDS MINED

80% Gem Quality

20% Industrial
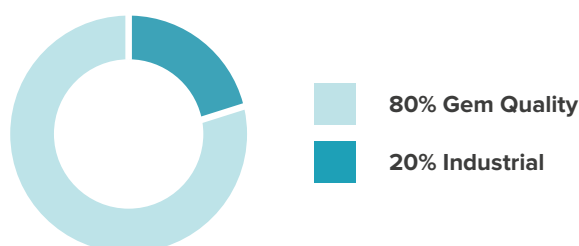
In the diamond value chain, the upstream rough diamond wholesale market is the smallest, at about USD 15 billion. Midstream gem-quality, cut diamond wholesale market is larger at USD 25 billion and the retail diamond jewellery market is a grand USD 80 billion.

UPSTREAM			MIDSTREAM			DOWNSTREAM
Exploration and production	Diamond serting and valuation	Rought Diamond Sales	Cutting & polishing	Polished Diamond Sales	Diamond jevellery manufacturing	Diamond jewellery retail sals

Diamond producers

Owns and/or operate diamond miners. Mined rough diamonds are sold to a group of handpicked selected clients either through auctions or long/short term contracts.

Alrosa
De Beers
Rio Tinto
Petra Diamonds

Diamond processors

Transforms the diamonds forms rough to polish through a journey of trading, wholesaling, polishing and cutting to ensure that each diamond has **that** brilliance.

KGK
Venus Jewel
**Hari Krishna Exports Pvt. Ltd.**
SRK

Diamond retailers

Retail diamonds jevelry in various cuts, colors, clarity grades and carat sizes.

Van Cliff & Arpels
Tiffany Co.
Cartier
Harry Winston
Graff
Piaget
Bvlgary

There are an estimated 26 million carats of gem-quality cut diamonds worth USD 25 billion produced annually, and an estimated cumulative produced stock of existing investable diamonds equal to 1 billion carats worth USD 1 trillion. This is no small number, which begs the question of why they have not developed as an asset class on their own.

Actually, both Pedigree Diamonds and large and rare diamonds have been actively acquired and collected by royals and wealthy individuals for centuries, and this activity has picked up in the past few decades with the growth of new wealth and the globalization of the diamond industry. However, it remains a largely secretive bilateral brokered market, with some high profile auction sales shedding precious little light on transactions and pricing. Despite these drawbacks, Pedigree Diamonds have offered returns of 2% to over 40% per annum, with an estimated weighted IRR of 5.5% for their fortunate owners. Outside of Pedigreed Diamonds, Investible Polished Diamonds have also increased in value over time – since the end of De Beer's monopoly in 2003, diamonds have appreciated by about 7.3% per annum, accordingly to the Rapaport Diamond Index. So diamonds have offered a return of between 5% and 7% per annum, making them a very attractive inflation-beating asset class. However, the previous monopolistic structure of the production and distribution system has been an impediment to making diamonds investible, but this has changed dramatically in the past two decades.

RAPAPORT DIAMOND INDEX (1987-2017)
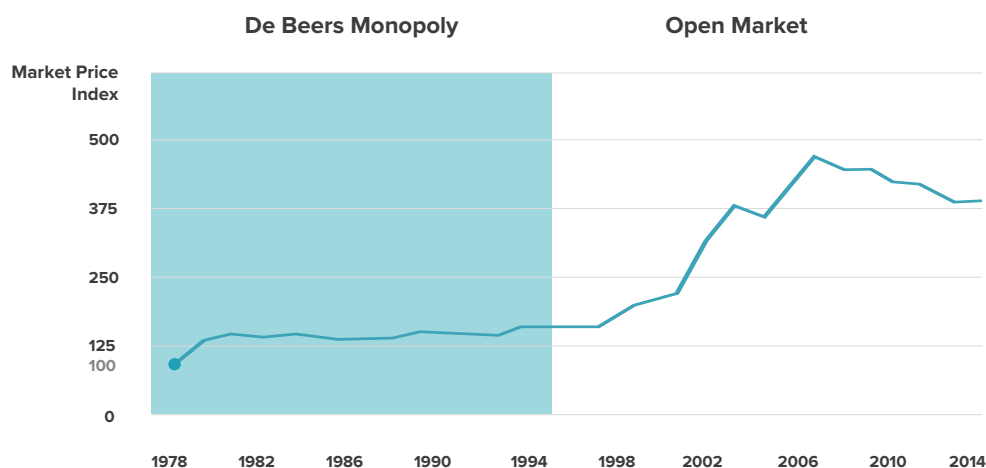
Source: Rapaport Diamond Price Statistics Annual Report 2017

RAPAPORT DIAMOND INDEX & DE BEER MARKET SHARE (1987-2017)
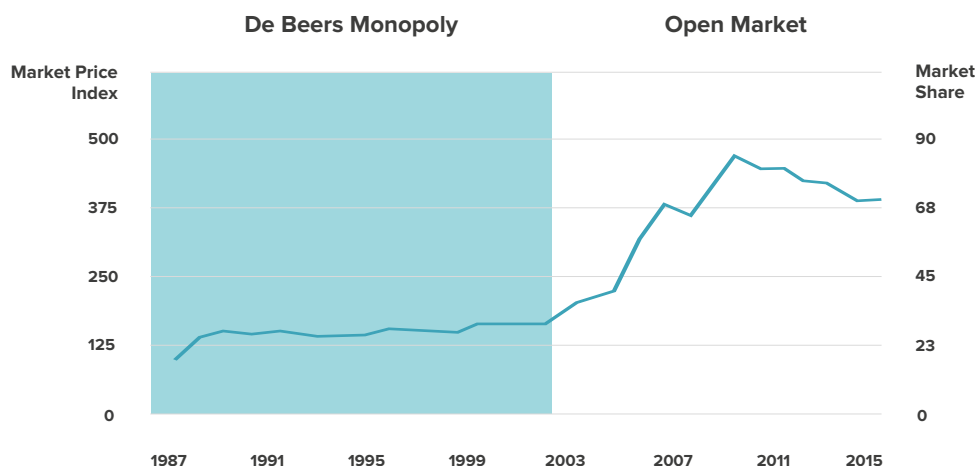
Source: Rapaport Diamond Price Statistics Annual Report 2017, Paul Zimnisky Analysis

Up to the end of the 20th Century De Beers had a strangle hold on the diamond mining and wholesale industry, with a peak market share of almost 90%, thus enabling the company to control diamond prices and effectively scaring off investors. However, today De Beers mines roughly 1/3 of the world's diamonds, with Alrosa mining about the same and Rio Tinto and Dominion trailing behind, thus eliminating the previous monopoly player in the industry.

Currently the main obstacle keeping diamonds from becoming an asset class has been a combination of the lack of fungibility and a wide bid-offer spread in the secondary market. Diamonds are not fungible because each diamond is unique – diamonds originate from different volcanic pipes in different geographies, and thus have varying natural characteristics of Color and Clarity. Each diamond is then individually cut and polished, further differentiating them by man-made characteristics of Cut and Carat. As a result, each diamond will have a different price, depending on the aforementioned four "C"s, and these prices are subjective, as each dealer may have a different value for each diamond. The end result is a very wide bid-offer spread that can range from 10% to over 50%, depending on the diamond, making trading of diamonds very expensive, and thereby reducing their liquidity.

There are some possible solutions to these barriers, most of which would involve the pooling and securitization of a large selection of diamonds and a fractional ownership arrangement that would allow assignment and therefor secondary market trading. There have been some attempts at this, in the form of diamond funds, for example a diamond fund called the Thomson McKinnon Diamond Investment Trust, incorporated in 1981) and a diamond ETF, Diamond Circle Cap, listed in 2008. Both of these approaches failed – the diamond fund collapsed because of a combination of poor market timing and the open-ended nature of the fund, which give investors the ability to redeem fund units for cash, thus obliging the fund to sell diamonds to meet redemptions, and thus face the very wide bid-offer spread. The ETF did not get launched largely because of concerns about the same issues, coupled with concerns about pricing, both for purchase and sale, as well as for mark-to-market purposes.

So it appears that to create a successful diamond investment in the form of a pool of diamonds with fractional ownership, a few key points need to be addressed, namely (i) open-ended redemptions, (ii) pricing, and (iii) market timing.

OPEN-ENDED REDEMPTIONS

are a challenge because they enable investors to redeem their investment for cash, which normally would cause a sale of some of the diamond investments, and thus exposure to losses due to a wide bid-offer spread. An alternative would be a closed-ended investment vehicle, which would preclude redemption and limit exits to a sale of units in the secondary market. However, closed-ended vehicles are often unpopular because of the inherent redemptions restrictions, which often result in their trading at a discount to Net Asset Value ("NAV") and thereby limit the upside potential for investors. A solution to this problem is to establish an open-ended investment vehicle with an "in-kind" redemption feature, with redemptions being in the form of diamonds. In this structure, investors can exit from their investment either in the form of a secondary market sale of units, or a redemption in the form of diamonds, which they could then chose to either keep or on-sell. Diamond market participants would be able to monitor the price of the vehicle, and when the price trades below the fair market value of the diamonds there would be an arbitrage opportunity, and they could then buy units and redeem for diamonds at a discount to the prevailing market price. This open-ended feature would thus lend demand for the units and thus offer price support, limiting the risk of the units trading at a discount.

PRICING

remains a big issue in the diamond industry, since it has a complex ecosystem that runs from mining companies producing and selling rough diamonds to cutters and polishers who on-sell to wholesalers and retailers, who finally sell to consumers. The result is a variety of rising price points along the production and sales chain. For a large scale investment in diamonds it would make sense to purchase diamonds at the lowest possible price for gem-quality diamonds in the cycle, which would be just after the cutting and polishing stage. Prices at this level are generally quoted at a discount to a reference price, which is usually the Rapaport Diamond Report price. There are alternative prices available, generally provided by diamonds exchanges and some diamond merchants, but Rapaport remains the principal reference price for the industry. However, since each diamond is unique and thus has different characteristics, pricing of any single diamond involves an approximation based on index pricing provided by sources such as Rapaport.   To find the actual price of a specific diamond requires a pricing model, which can now be programmed with a high level of accuracy using approaches such as Multiple Linear Regression, Decision Trees, Random Forests, Neural Networks, Cluster Analysis, and Principle Component Analysis.

PURCHAISING POWER INDICES OF DIAMONDS AND USD
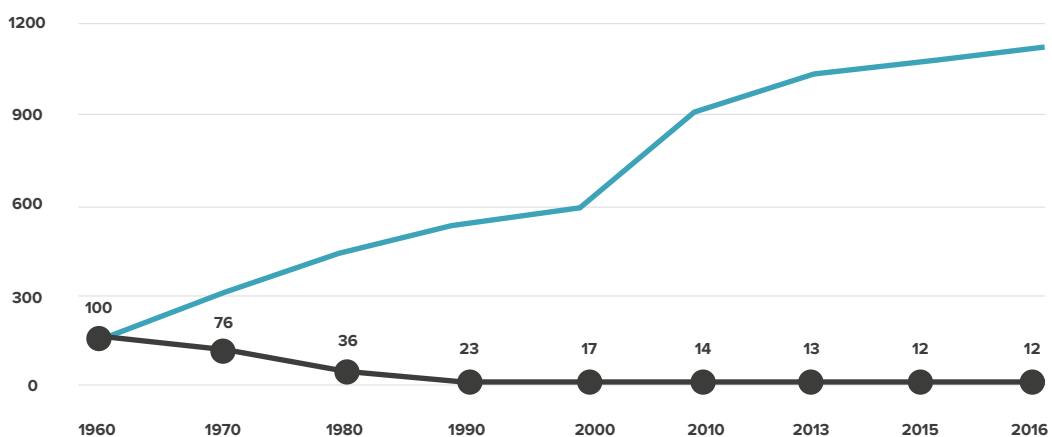
Source: Antwerp World Diamond Centre, International Monetary Fund

Diamond   CPI PP

MARKET TIMING

is always hard to predict, but good timing can have a very big impact on the market acceptance and thus growth of any investment. It goes without saying that issuing an investment in a rising market and the resulting track record of capital gains will make the investment more attractive than issuing in a falling market. The next question to ask then is are diamond prices in the future likely to rise or fall. The rough and polished diamond sectors don't trade exactly in tandem but are obviously related. Since 2008 rough diamond prices have grown by about 35% according to the Rapaport Research Report 2018; while polished diamond prices have grown by 16%. Research by Frost and Sullivan predicts that supply of rough diamonds will contract from 147 million carats per annum in 2018 to 62 million carats in 2030, and demand will increase from 155 million carats in 2018 to 221 million carats in 2030. The resulting deficit of 159 million carats in 2030 portends a rising price environment for diamonds, making this a good time to launch a diamond investment.

In summary, there is an open challenge to find a solution to making diamonds an accepted and successful investible asset class. The parameters are likely to involve a large and diverse pool of diamonds that is unitized and thereby offers fractional ownership. The units will have to have a form of open-ended redemption to enable arbitrage, and thus price support, but preferably redemption "in kind" and not in cash, to avoid having to face wide bid-offer spreads. The solution will also have to tackle the pricing issue and will need to incorporate a non-discretionary and index-linked pricing model to accurately price both individual diamond transactions as well as mark-to-market prices for the purpose of calculating an accurate and objective NAV. Finally, it doesn't hurt to have some luck on your side and time the launch of diamond investment with a rising market, as we are likely to see in the coming years.

ROUGHT DIAMOND DEMAND SUPPLY GAP
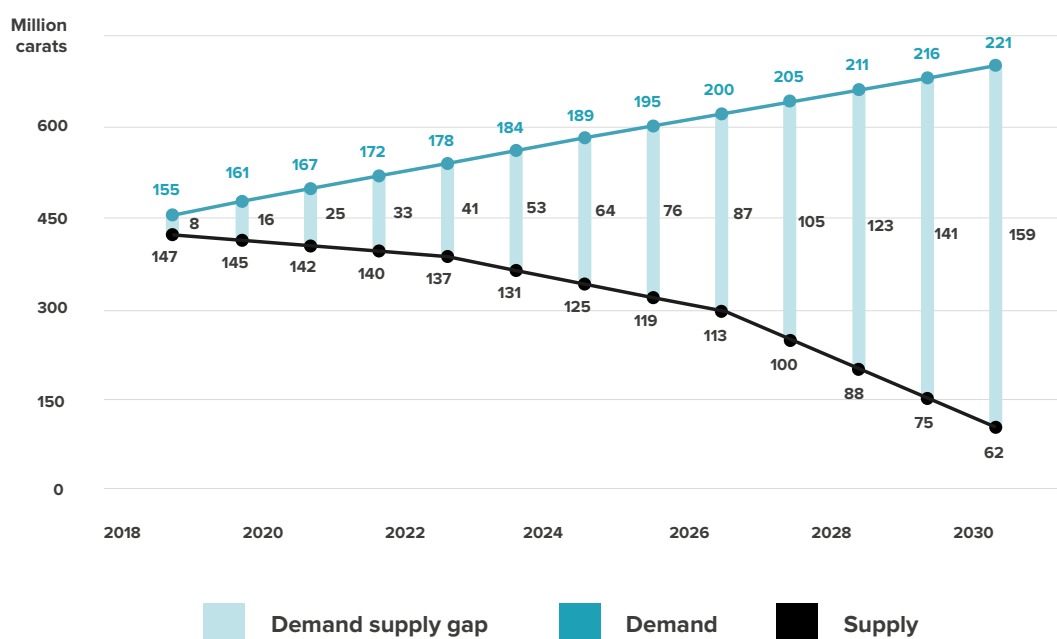
Source: Frost and Sullivan, Paul Zimnisky analysis, Bain & Company

4. D1 COIN & TECHNOLOGY

D1 COIN

The D1 Coin is a virtual currency built on the Ethereum blockchain. The goal for D1 Coin is to be a top token on established cryptocurrency exchanges and lead the market by trading volume. With the value of the D1 Coin being a function of not just market forces but also the value of natural diamonds, users who purchase D1 Coins will be protected with a more stable price. In addition to listing on exchanges, D1 Coins are exchangeable for investment-grade diamonds, giving D1 Coin high liquidity, therefore benefitting users with a wide range of uses.

Each D1 Coin is backed by 1/1000th of a diamond of the following approximate parameters, as certified by the Gemological Institute of America ("GIA"): round brilliant shape, 1 carat, color D-F, EX - VG cut, IF-VS1 clarity.

For every diamond deposited into the vault, a corresponding number of D1 Coins will be minted according to the D1 Matrix. The D1 Coins are then sold by the D1 Mint to buyers in the market, in exchange for either fiat currencies or cryptocurrencies. D1 Coin will be listed on major cryptocurrency exchanges. The D1 Mint will constantly review major and upcoming exchanges, partnering with these to increase the liquidity of D1 Coin worldwide.

The key advantage of D1 Coin compared to major cryptocurrencies not backed by assets is that the price of D1 Coin is a function of both the value of underlying diamonds as well as market demand for the token. Every D1 Coin is the same and therefore fungible; D1 Coins give the owner equal rights to select diamonds and redeem for diamonds as priced by the D1 Matrix. Coin redemption may be done at any time. Upon a D1 Coin redemption, the D1 Coin owner selects diamonds with a price valued in D1 coins and the diamonds are moved out of the vault and delivered to the D1 Coin owner, while the corresponding number of D1 Coins are "burnt" and removed from the ecosystem.

Beyond the central concept of the D1 Coin as a store of value and a medium of exchange for transactions, a suite of applications will be created for the D1 ecosystem.

TECHNOLOGY

Blockchain technology was chosen as the platform to digitize physical diamonds, because transactions through cryptocurrency are fast and divisible, presenting a solution to the issue of diamonds traditionally being an illiquid asset. Through D1 Coins, owners can effectively purchase fractional parts of a diamond. Furthermore, blockchain technology will grant D1 Coin users greater privacy, security and offer lower transaction fees.

D1 Coin is built on Ethereum blockchain using the ERC-20 standard, which allows for the creation of customized digital assets and currencies.

5.
D1 DIAMONDS

DESCRIPTION

Every diamond supplied by the Diamond Supplier will be checked by professionals for compliance with its characteristics as listed in the accompanying GIA certification. Generally, the range for the carats of diamonds sourced is 0.3 to 6.0. In addition, D1 Agent shall, in due time, establish a Unique Diamonds Acquisition (UDA) group, which will combine mathematical analytics and market intelligence to determine the appropriate acquisition price of unique diamonds. These diamonds will be quantified in D1 Coins on a cost-plus basis.

DIAMOND SOURCING

Diamonds will be sourced from Diamond Suppliers, who are subject to stringent requirements. A Diamond Supplier must be an established party in the diamond industry with relevant credentials, and maintain this standing throughout its tenure as a Diamond Supplier. All diamonds sourced, regardless of characteristics or supplier, must have accompanying GIA certification. There will be a clear protocol for the verification of every diamond, including laser marking and secure tamper proof packaging, in order to eliminate the possibility of individual diamonds not corresponding to its GIA certificate.

To cover the supply of diamonds for the D1 Coin launch and expansion phases, diamonds will be sourced from the original Diamond Supplier - Diamundi Pte Ltd. The diamonds sourced for the D1 Reserve by Diamundi will be done at arm's length basis, at current market prices. Diamundi will account for 100% of the diamond supply in 2018, with these diamonds consolidated from major parties in the diamond industry, including Alrosa, KGK Group and Kristall Smolensk.

In 2019, D1 Reserve will make an open invitation to qualified diamond suppliers to provide up to 50% of the total supply. This percentage is expected to increase to up to 67% in 2020, 75% in 2021 and up to 80% in 2022. After 2021, Diamundi will maintain a target limit of 20% of the yearly supply of diamonds supplied. The D1 Reserve will impose the same terms and conditions regarding diamond sourcing on all Diamond Suppliers.

DIAMOND CUSTODY

The D1 Reserve is a separate independent legal entity which is responsible for the custody and safekeeping of the diamonds, as well as receiving diamonds from the Diamond Supplier and facilitating the redemption of diamonds. Diamonds will be stored by the D1 Reserve at secure vaults in Singapore and Switzerland, maintained by reputable logistics and storage providers such as Brink's and Malca-Amit. In administering its duty to review the inventory of D1 Diamonds, the D1 Reserve must make available to the public periodic inventory lists and valuation reports. The inventory of diamonds will be subject to regular audits by an established accounting firm.

6.
OPERATIONS

The D1 ecosystem consists of a few main parties, namely Coin Buyers, the D1 Mint, the D1 Reserve, and the Diamond Supplier.

The D1 Mint appoints the Diamond Supplier and oversees the D1 Reserve, which also acts as a custodian by holding diamond inventory. The D1 Mint will issue D1 Coins to Coin Buyers, who are able to purchase and redeem diamonds from the D1 Mint. The D1 Mint functions as the central party in the D1 ecosystem coordinating the flow of D1 Coins, diamonds and fiat currency.

D1 COIN ECOSYSTEM
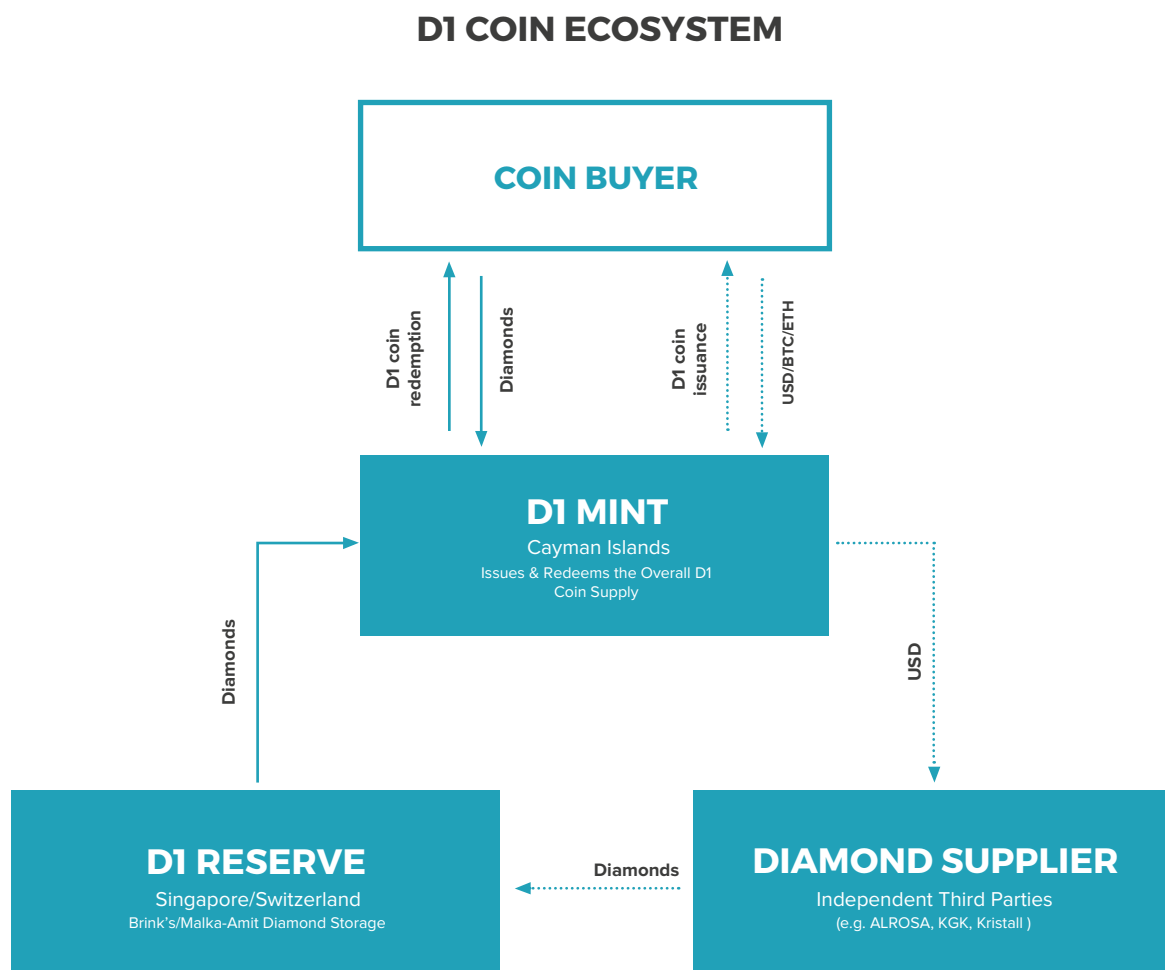
D1 MINT

The D1 Mint appoints and oversees the D1 Reserve, the Diamond Supplier and other service providers to undertake their duties. The D1 Mint is a company established in the Cayman Islands with a Board of Directors providing governance.

The issuance of D1 Coins will be undertaken by the D1 Mint. After diamonds provided by the Diamond Supplier are checked by professionals for compliance with their characteristics as listed in the GIA certifications, each individual diamond is evaluated using the D1 Matrix.

The D1 Matrix is a proprietary pricing algorithm based on a neuron network analysing diamond prices from established market sources, primarily Rapaport. The relationship between the 4Cs (carat, colour, clarity, cut) plus 7 more characteristics of a diamond and its price is analysed, determining statistically the appropriate quantity in D1 Coins for each diamond. The D1 Matrix reflects market pricing conditions.

D1 Coins are issued are sold to buyers in exchange for major fiat currencies or cryptocurrencies, and can be traded on major cryptocurrency exchanges. The D1 Mint is responsible for publishing periodic reports of D1 Coins minted and burned at the D1coin.io website. The D1 Mint will charge a fee of 5% for processing the receipt of diamonds and a 2.5% fee for both the issuance and redemption of D1 Coins.

D1 COIN ISSUANCE
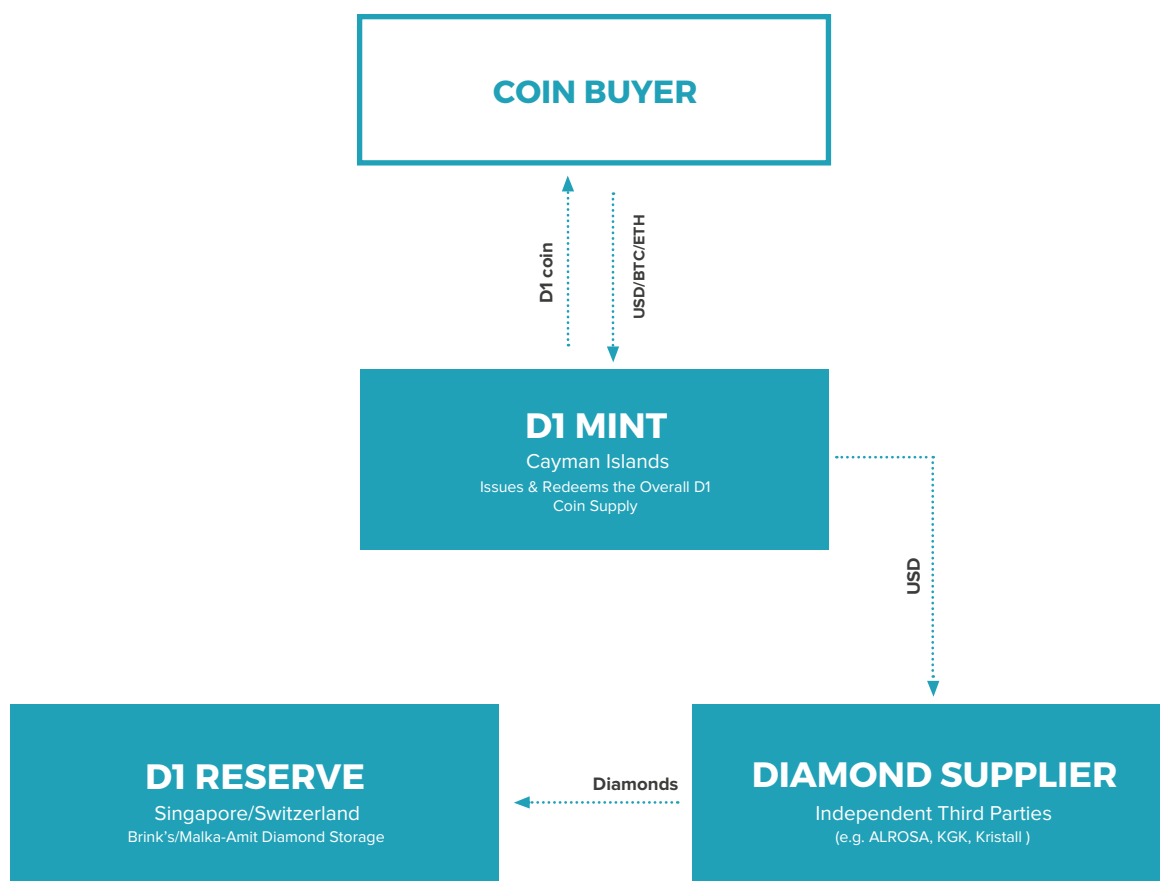
D1 RESERVE

The D1 Reserve acts as the custodian, holding the D1 diamond inventory in vaults in Singapore and Switzerland. To uphold the transparency of operations, the D1 Reserve will be responsible for publishing regular periodic valuation reports disclosing the Net Asset Value (NAV) of the inventory of diamond supplies based on the D1 Matrix on the D1coin.io website. Regular reports on the diamond industry will also be published, which may prove beneficial to users, although these reports do not constitute investment advice of any manner by the D1 Reserve to users.

D1 COIN – DIAMOND EXCHANGE

Coin Buyers may redeem their D1 Coins for specific diamonds in the inventory maintained by the D1 Reserve by redeeming a quantity of D1 Coins that corresponds to the value of the diamonds as priced by D1 Matrix.

The protocol for a D1 Coin-to-Diamond exchange starts with the user browsing the current inventory via the D1coin.io website, and selecting particular diamonds. Next, the user must send the corresponding quantity of D1 Coins to the D1 Mint, after which the diamonds will be marked as reserved and removed from the D1 Reserve inventory.

Once receipt of the D1 Coins is confirmed by the D1 Mint, these D1 Coins are burnt, and ownership of the selected diamonds will be transferred to the user. After obtaining ownership of a specific diamond, the user must obtain an appointment with D1 Mint for redemption of the physical diamond within 30 days of acquiring ownership of the diamond.

The user may choose to either collect the diamonds from storage locations determined by D1 Reserve, or arrange for delivery. Delivery services will be provided by leading providers such as Brink's, Malca-Amit and FedEx, with all costs incurred to be borne by the user. Coin Buyers redeeming D1 Coins for diamonds will be charged administration, handling, shipping and insurance costs for each redemption.

D1 DIAMOND EXCHANGE

| COIN BUYER | D1 coin → ← Diamonds | D1 MINT Cayman Islands Issues & Redeems the Overall D1 Coin Supply | Release instruction ← Diamonds → | D1 RESERVE Singapore/Switzerland Brink's/Malca-Amit Diamond Storage |

7.
APPLICATIONS
& FUTURE DEVELOPMENTS

For Users

D1 Coin provides a safe alternative for individuals who are interested in cryptocurrencies, as it has actual intrinsic value, being backed by physical diamonds. Cryptocurrencies work as an investment when backed by demand from participants in the network. However, there are no safeguards for non-asset-backed cryptocurrencies to cushion against abrupt and drastic drops in prices. As D1 Coin is backed by physical diamonds which can be redeemed at any time, users are assured of stability and security. Therefore, D1 Coin is much less likely to be subject to the same degree of price volatility which characterizes much of the cryptocurrency market.

For Merchants

Merchants benefit from D1 Coin being a more stable payment medium as compared to other non-asset-backed cryptocurrencies. Merchants can participate in the growth of cryptocurrency payments, enjoying the benefits of transacting with cryptocurrencies. These include cheaper processing fees, faster pay-outs, no chargebacks and feasible micro transactions, while avoiding the risk of large price fluctuations in some cryptocurrencies.

For Exchanges

D1 Coin augments the utility of current cryptocurrency exchanges by addressing the need for more safe-haven assets with tangible, intrinsic value. Compared to other cryptocurrencies which are priced almost entirely through speculation, D1 Coin complements current cryptocurrency markets characterized by an oversupply of high-risk coins. Additionally, D1 Coin presents an alternative liquid cash-out option for users of exchange platforms, compared to the traditional fiat currency cash-out option. By being able to convert D1 Coins to diamonds at all times, users do not have to solely rely on fiat currency cash-out.

Future Developments

Many future applications for D1 Coins are planned to enhance the minting, trading, storage and redemption of D1 Coins. Amongst the new developments will be: a high security coin vault for D1 Coins and other cryptocurrencies, providing individual offline servers for coins owners located geographically remote secured locations; D1 Coin investment programs to enable saving for life events by investment in the diamonds as an asset class; Diamond-specific D1 Coins that represent ownership in individual single high value diamonds; Diamond Hearts, a diamond gifting program which enable D1 Coin owners to anonymously reward people and charities of their choice; Closed market currency for Casinos/Junket Operations, gaming and online betting; Gift coupons for the luxury retail market; etc.

8. TEAM

D1 TEAM

HOGI HYUN
Director

Hogi is the founder and Managing Director if D1 Mint Limited.　He is concurrently the Managing Director Abacus Capital, overseeing all investment and advisory activities. Abacus Capital is an investment, asset management and advisory group headquartered in Singapore.

Hogi was formerly the Managing Director at Bankers Trust Company in Singapore where he established and managed its corporate finance, risk management and investment management businesses for Southeast Asia. Hogi started his career at Bankers Trust Company in New York, and subsequently worked in London and Hong Kong. Hogi has been a member of the Investment Panel of The Enterprise Challenge, a venture fund backed by the Singapore Prime Minister's Office; a member of the Board of Directors of the Singapore Civil Service College and a the Singapore National Library Board.

Hogi graduated Magna cum laude from Yale University in 1985 with a Bachelor of Arts degree in East Asian Studies. He studied at the Beijing Foreign Languages Institute and Fudan University in Shanghai, and holds the Grand Diplôme from La Varenne Ecole de Cuisine in Paris and the Diplôme Universitaire d'Aptitude à la Dégustation des vins from the University of Bordeaux.

BILL CLAXTON
Operations Director

Bill is a seasoned entrepreneur with more than 15 years of experience in the technology industry. He is currently the operations director at Ledgeris, a new partnership between himself and U-Zyn Chua.

Ledgeris helps companies refine their blockchain business strategy and secure funding via ICO, and is a subsidiary of Iterate. Founded by Bill in 1999, Iterate is a specialist in Internet video webcasting solutions and services, based in Singapore.

Bill holds a certificate in Blockchain for Technical Executives and Analysts from B9Lab Academy in the UK and has spoken at various blockchain events. Bill has been active in the IT scene in Singapore for more than 20 years, was an early Bitcoin investor and most recently served as operations director for fintech start-up KYC Chain, including writing their ICO whitepaper. KYC Chain is a company based in Hong Kong, which uses distributed ledger technology to allow users to manage their digital identity securely.

JEFF WENTWORTH
Technical Director

Jeff is a Technical Director at D1 and developed the D1 ecosystem smart contracts. He is also a Co-Founder of Curvegrid, a blockchain technology company. Previously, Jeff spent six years at Goldman Sachs as a Vice President and global product owner of block and object storage. Prior to that, Jeff was a technology consultant and customer engineer at EMC. He graduated from the University of Waterloo with a degree in Computer Engineering.

WILLIAM METCALFE
Technical Director

William a Technical Director at D1 and developed the D1 ecosystem smart contracts. He is also a Co-Founder of Curvegrid, a blockchain technology company. Previously, William was the Chief Technology Officer of Gilt Japan, after joining in New York City as an early employee. William helped grow Gilt from its first order to become one of the leading ecommerce sites. He graduated from the University of Waterloo with a degree in Computer Science.

9.
LEGAL ASPECTS

The legal status of cryptographic digital tokens supported and/or recorded on a blockchain platform, such as the D1 Coins, has not been judicially considered in the Cayman Islands and for that reason we cannot comment on how tokens would be legally characterised nor can we comment on what a court may decide to be the necessary conditions to validly issue, transfer and grant a security interest over a token.

Tokens issued pursuant to a token generation event (TGE) and which do not advance an illegal or improper purpose should generally be construed as a property right that a holder possess in or to a digital asset, the nature and extent of which will be determined by the representations made by the issuer, the license agreement of the relevant token smart contract and the protocols of the given blockchain network.

That said, where a token issuer has made certain representations to a token purchaser as to the characteristics of a token, we anticipate that a court in the Cayman Islands will endeavour to objectively determine the intention of the parties and the reasonable expectation of the token purchaser.

ACCORDINGLY, WE ADVISE TO REVIEW THE TERMS AND CONDITIONS AND OF THE DOCUMENTS ISSUED AND THE STATEMENTS MADE BY THE ISSUER TO PROSPECTIVE TOKEN PURCHASERS.

We understand that various legislative and executive bodies throughout the world are currently considering, or may in the future consider, laws, regulations, guidance, or other actions, which may severely impact the ability to conduct a TGE. Failure by any issuer to comply with any laws, rules and regulations, some of which may not exist yet or are subject to interpretation and may be subject to change, could result in adverse consequences, including civil penalties and fines. It is possible that any jurisdiction may, in the near or distant future, adopt laws, regulations, policies or rules directly or indirectly affecting the blockchain network upon which the D1 Coins are based, or restricting the right to acquire, own, hold, sell, convert, trade, or use D1 Coins, or to exchange D1 Coins for either fiat currency or other digital D1 Coins.

D1 MINT REGULATORY FRAMEWORK

There are currently eight "regulatory laws" in the Cayman Islands, as defined in the Monetary Authority Law. In our view, the regulatory laws that are relevant to the proposed TGE include the Securities Investment Business Law (Revised) (Securities Investment Business Law or SIBL), the Money Services Law (2010) (Money Services Law), the Mutual Funds Law (Revised) (Mutual Funds Law), the Proceeds of Crime Law (Revised) (Proceeds of Crime Law) and the Money Laundering Regulations (2017) (Money Laundering Regulations) issued under the Proceeds of Crime Law.
Based on the Memorandum of Advice made by Ogier Law in respect of whether the D1 Mint is regulated under the laws of the Cayman Islands, we are of the view that:

(a) for the purposes of the Securities Investment Business Law, the D1 Mint would not be considered to be carrying on a Securities Investment Business and therefore would not be required to be licensed or registered in the Cayman Islands under such law;

(b) for the purposes of the Money Services Law, the D1 Mint is not in the business of providing a Money Services Business (defined below) and therefore would not be required to be licensed in the Cayman Islands under such law;

(c) for the purposes of the Mutual Funds Law, the D1 Mint would not be considered to be a "mutual fund"; and therefore would not be required to be licensed or registered in the Cayman Islands under such law;

(d) for the purposes of Cayman anti-money laundering requirements, the D1 Mint would be required to comply with the provisions of the Proceeds of Crime Law and may be required to comply (and if not required, should comply) with the Money Laundering Regulations (defined below), which requires, among other things, the D1 Mint to adopt written policies and procedures, designate a person at managerial level to act as the Anti-Money Laundering Compliance Officer and perform customer due diligence measures when establishing a Business Relationship or One Off-Transaction ; and

(e) for the purposes of FATCA and CRS, if the D1 Coins are considered "Securities", the D1 Mint is likely an Investment Entity and would therefore have registration, operational and potential reporting obligations under FATCA and CRS.

PROCEEDS OF CRIME LAW AND THE MONEY LAUNDERING REGULATIONS

Money laundering is characterised by an attempt to conceal the illegal source of funds and transform those funds into legitimate funds. Money laundering is generally motivated by illegal or criminal activity. Once laundered, funds derived from illegal means can more easily be used for other purposes. Offences under the Proceeds of Crime Law (PCL).

The PCL is one of the key legislative enactments in the Cayman Islands to regulate anti-money laundering (AML). The PCL is modelled on the UK Proceeds of Crime Act, 2002 and applies to all businesses as well as individuals. Under the PCL, a person commits a criminal offence if such person:

(a) conceals, disguises, converts or transfers criminal property or removes criminal property from the Cayman Islands;

(b) enters into or becomes concerned in an arrangement which he knows or suspects facilitates (by whatever means) the acquisition, retention, use or control of criminal property by or on behalf of another person;

(c) acquires, uses or has possession of criminal property;

(d) fails to disclose to a Money Laundering Reporting Officer or the Financial Reporting Authority (FRA) suspicion or knowledge of another person engaging in a prohibited act. Disclosure of suspicion to the FRA is a defence; however, failure to disclose may be subject to a "negligence test"; whereby the Court may rule that a person had reasonable grounds for knowing or suspecting criminal conduct even if they did not actually know or suspect such conduct; or

(e) makes a disclosure (other than to the FRA) which is likely to prejudice an investigation being or about to be conducted by the FRA (also known as "tipping off").

D1 MINT IS SUBJECT TO THE PCL AND WILL NEED TO REMAIN IN COMPLIANCE WITH THE PROVISIONS OF THAT LAW.

9.CONCLUSION

The cryptocurrency market has developed at light speed, and yet is poised for more growth as a result of the many potential use cases of blockchain technology. However, institutional and high net worth investors are still largely sceptical of the worth of cryptocurrencies due to the high volatility in prices and the lack of intrinsic value, and thus withhold investments into the crypto space.

With the offering of a stable cryptocurrency through the introduction of D1 Coin, the backing of physical and natural diamonds will alleviate these concerns. D1 Coin is positioned to be the new global standard of cryptocurrencies: stable, safe and valuable. This will be achieved by maintaining high standards of transparency in operations, while taking innovative approaches towards developing and promoting the D1 ecosystem, thus always benefitting users in an accountable manner. D1 Coin is poised to attract large investments from untapped institutional and high net worth investors, as well as being highly sought after by existing users on global exchanges. Just as the invention of the Bitcoin revolutionized the concept of currencies, D1 Coin is pointed to revolutionize the concept of cryptocurrencies.

APPENDIX:

THE D1 MATRIX

INTRODUCTION

Artificial intelligence (AI) is an area of computer science that emphasizes the creation of **intelligent machines that work and react like humans.** One the core part of AI is machine learning — it requires an ability to identify patterns in steams of inputs, whereas learning with adequate supervision involves classification and numerical regression. Methods based on binary trees, which will be discussed, are ones of the most effective and recognized techniques that can provide people accurate predictions in understandable form.

Decision Trees (DTs) were studied by the scientists Morgan and Sandqvist in 1963. They first proposed a method based on trees and named the Automatic Interaction Detector (AID). The same method was proposed by several authoritative scholars: Messenger and Mundell (1972), Gillo (1972). Their algorithms were developed independently of each other, but nevertheless, had very similar characteristics. DTs is a non-parametric supervised learning method used for classification and regre ssion. The goal is to create a model that predicts value of a target variable by learning simple decision rules inferred from the data features.

The success of the Decision Trees (DTs) is explained by the several basic factors:
1. Decision Trees are not parametric. They can model extremely complex dependencies between input and output data without a priori judgments;
2. Decision Trees are not susceptible to emissions and errors;
3. Decision Trees are resistant to irrelevant and «noisy» variables.

It is important to understand that Decision Trees (DTs) is basic and major algorithm for many modern and complex algorithms, including «random forest». Random Forest algorithm is a key technique in our prediction model.

RANDOM FOREST REGRESSION

Random Forests create a type of methods that consist of **constructing a «forest» from the Decision Trees (DTs)** growing from a randomized version of induction of decision trees. Such structures have a low level of bias and high dispersion, which allow them to win exactly in the averaging process. The **Random Forest** model is a type of **additive model that makes predictions by combining decisions from a sequence of base models.**

Random forest is a method invented by Leo Breiman in co-authorship with Adele Cutler, which is based on the use of a decision tree committee (ensemble).

The essence of the algorithm is random selection of variables made at each iteration, after which a decision tree is built on this new sample. In this case, «bagging» is performed - a sample of two-thirds random observations is used for training, and the remaining third is used to evaluate the result. Such operation is done hundreds or thousands of times. The resulting model will be the result of «voting» a set of trees obtained from the simulation.

Advantages of using Random Forest algorithm:
1. High quality of the result, especially for the data with large number of variables and with small number of observations;
2. The ability to parallelize;
3. No test sample required.

RANDOM FOREST REGRESSION FOR DIAMONDS PRICE PREDICTION

On the basis of the described methods — Random Forest - we predict the diamond price. Prediction model is based on the sample of 250,000 diamonds. Prediction model consists of the 11 characteristics: Carat Weight, Depth, Table, Shape, Cut, Culet, Symmetry, Fluorescence, Polish, Clarity, and Color.

DATA PREPROCESSING

Note that many parameters have text values. Using the One-Hot Encoding algorithm, we moved all text values to vectors from 0 and 1. For example, if the Shape parameter has 3 states, then each state will be encoded as follows: (1, 0, 0), (0, 1, 0), (0, 0, 1). It turned out that out of 11 columns of parameters we got 62 columns, the dimension of the matrix increased, which allowed the regression algorithm to increase the accuracy of predictions.

CARAT	0.5. 1.0. 1.5. 2.0. 3.0
CUT	VERY GOOD - EXELLENT
CLARITY	VVS2 - IF
COLOR	D - F
SHAPE TYPE	ROUND, PRINCESS, OVAL, MARQUISE, PEAR, CUSION, EMERALD, ASSCHER, RADIANT, HEAT
DEPTH	55-65
TABLE	50-65
POLISH	VERY GOOD - EXELLENT
SYMMETRY	VERY GOOD - EXELLENT
CULLET	NONE
FIUORESCENCE	NONE

Also, to improve the results of the Random Forest Regression algorithm, when preparing data from the table, all emissions were removed. It is worth noting that only 0.095% of the data was filtered out, which did not significantly affect the sample size.

At this stage, the data was divided into 2 parts: the price vector Y and the matrix of characteristics X.

The most important step for increasing the accuracy of predictions was Data Scaling. Using the Scikit-learn preprocessing library, the characteristics were scaled so that they were uniformly distributed. Note that the vector with prices remained unchanged.

After that, the sample was divided into Training data and Testing data in the proportion of 80 to 20, respectively, which is the standard among machine learning experts, including the one recommended by Stanford University Professor Andrew Ng.

To create the Random Forest Regression model, the Keras library was used.
The following settings were used:

RandomForestRegressor(bootstrap=True, criterion='mse', max_depth=None,
        max_features='auto', max_leaf_nodes=None,
        min_impurity_split=1e-07, min_samples_leaf=1,
        min_samples_split=2, min_weight_fraction_leaf=0.0,
        n_estimators=100, n_jobs=1, oob_score=True, random_state=42,
        verbose=0, warm_start=False)

In the course of the algorithm, we evaluated the error and «grown» new trees, which will help reduce the error. This is the formula for calculating the error «Mean Squared Error»:

$$E_{\mathbf{X},Y}(Y-h(\mathbf{X}))^2$$

Since the number of trees in the algorithm can be increased to infinity, although this is not necessary in practice, we get that the size of the error tends to zero.

$$E_{\mathbf{X},Y}(Y-av_k h(\mathbf{X},\Theta_k))^2 \rightarrow E_{\mathbf{X},Y}(Y-E_{\Theta}h(\mathbf{X},\Theta))^2$$

(https://www.stat.berkeley.edu/~breiman/randomforest2001.pdf)

This once again proves that the Random Forrest Regression algorithm can't fail to work, and the accuracy of predictions depends only on the number of trees which is limited only by processing power. In our case, 100 trees were used and this, as shown below, is quite enough.
The model was evaluated using the Scikit-learn library:
1.   median_absolute_error (description)
2.   mean_absolute_error (description)
3.   r2_score (description)

The following indicators were obtained:

Abs_error: 81.6996801691
Median_abs_error: 48.35
R2 Score: 0.978748147454

R2 score estimates the accuracy of our model, based on a maximum of 1.0 score.

Thus, we can conclude that the algorithm works with sufficient accuracy, and therefore the training was successful.

References to get familiar with the algorithm of Random Forest

1. "Classification and Regression Trees". Breiman L., Friedman J. H., Olshen R. A, Stone C. J.
2. "Random Forests". Breiman L.

References to scientific articles, which provide evidence of the effectiveness of the algorithm Random Forest

1. https://www.stat.berkeley.edu/~breiman/randomforest2001.pdf
2. http://www.biostat.ucsf.edu/cbmb/publications/bench.rf.regn.pdf
3. http://www.lsta.upmc.fr/BIAU/b6.pdf
4. https://www.microsoft.com/en-us/research/wp-content/uploads/2016/02/decisionForests_MSR_TR_2011_114.pdf